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Product datasheet

Anti-KPNA4 antibody ab6039

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Overview

Product name	Anti-KPNA4 antibody
Description	Goat polyclonal to KPNA4
Host species	Goat
Tested applications	**Suitable for:** WB
Species reactivity	**Reacts with:** Mouse, Rat, Human **Predicted to work with:** Cow, Dog
Immunogen	Synthetic peptide corresponding to Human KPNA4 aa 500-600 (C terminal). Database link: **NP_002259** Run BLAST with Run BLAST with
Positive control	WB: Human ovary lysate. Mouse ovary and testis lysate. Rat testis lysate.
General notes	GenBank Accession Number – NP_002259.

The nuclear import of karyophilic proteins is directed by short amino acid sequences termed nuclear localization signals (NLSs). Karyopherins, or importins, are cytoplasmic proteins that recognize NLSs and dock NLS-containing proteins to the nuclear pore complex. The protein encoded by this gene shares the sequence similarity with Xenopus importin-alpha and Saccharomyces cerevisiae Srp1. This protein is found to interact with the NLSs of DNA helicase Q1 and SV40 T antigen.

The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.

If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Upon delivery aliquot and store at -20°C or -80°C. Avoid repeated freeze / thaw cycles.

Storage buffer	pH: 7.30 Preservative: 0.02% Sodium azide Constituents: 99% Tris buffered saline, 0.5% BSA
Purity	Immunogen affinity purified
Purification notes	Purified from goat serum by ammonium sulphate precipitation followed by antigen affinity chromatography using the immunizing peptide.
Primary antibody notes	The nuclear import of karyophilic proteins is directed by short amino acid sequences termed nuclear localization signals (NLSs). Karyopherins, or importins, are cytoplasmic proteins that recognize NLSs and dock NLS-containing proteins to the nuclear pore complex. The protein encoded by this gene shares the sequence similarity with Xenopus importin-alpha and Saccharomyces cerevisiae Srp1. This protein is found to interact with the NLSs of DNA helicase Q1 and SV40 T antigen.
Clonality	Polyclonal
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab6039 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★☆☆ (1)	Use a concentration of 0.5 - 1 µg/ml. Detects a band of approximately 55-60 kDa (predicted molecular weight: 58 kDa). A 1 hour primary incubation is recommended for this product. A customer reported that milk can significantly suppress antigen-antibody interaction on nitrocellulose membrane in WB.

Target

Function	Functions in nuclear protein import as an adapter protein for nuclear receptor KPNB1. Binds specifically and directly to substrates containing either a simple or bipartite NLS motif. Docking of the importin/substrate complex to the nuclear pore complex (NPC) is mediated by KPNB1 through binding to nucleoporin FxFG repeats and the complex is subsequently translocated through the pore by an energy requiring, Ran-dependent mechanism. At the nucleoplasmic side of the NPC, Ran binds to importin-beta and the three components separate and importin-alpha and -beta are re-exported from the nucleus to the cytoplasm where GTP hydrolysis releases Ran from importin. The directionality of nuclear import is thought to be conferred by an asymmetric distribution of the GTP- and GDP-bound forms of Ran between the cytoplasm and nucleus. In vitro, mediates the nuclear import of human cytomegalovirus UL84 by recognizing a non-classical NLS. In vitro, mediates the nuclear import of human cytomegalovirus UL84 by recognizing a non-classical NLS.
Tissue specificity	Highly expressed in testis, ovary, small intestine, heart, skeletal muscle, lung and pancreas, but barely detectable in kidney, thymus, colon and peripheral blood leukocytes.
Sequence similarities	Belongs to the importin alpha family. Contains 10 ARM repeats. Contains 1 IBB domain.
Domain	Consists of an N-terminal hydrophilic region, a hydrophobic central region composed of 10

repeats, and a short hydrophilic C-terminus. The N-terminal hydrophilic region contains the importin beta binding domain (IBB domain), which is sufficient for binding importin beta and essential for nuclear protein import.
The IBB domain is thought to act as an intrasteric autoregulatory sequence by interacting with the internal autoinhibitory NLS. Binding of KPNB1 probably overlaps the internal NLS and contributes to a high affinity for cytoplasmic NLS-containing cargo substrates. After dissociation of the importin/substrate complex in the nucleus the internal autohibitory NLS contributes to a low affinity for nuclear NLS-containing proteins.
The major and minor NLS binding sites are mainly involved in recognition of simple or bipartite NLS motifs. Structurally located within in a helical surface groove they contain several conserved Trp and Asn residues of the corresponding third helices (H3) of ARM repeats which mainly contribute to binding.

Cellular localization Cytoplasm. Nucleus.

Images

Western blot - Anti-KPNA4 antibody (ab6039)

Lanes 1-2 : Anti-KPNA4 antibody (ab6039) at 0.1 µg/ml
Lane 3 : Anti-KPNA4 antibody (ab6039) at 0.3 µg/ml
Lane 4 : Anti-KPNA4 antibody (ab6039) at 0.03 µg/ml

Lane 1 : Human ovary lysate
Lane 2 : Mouse testis lysate
Lane 3 : Mouse ovary lysate
Lane 4 : Rat testis lysate

Lysates/proteins at 35 µg per lane.

Predicted band size: 58 kDa

Lysates in RIPA buffer.

Detected by chemiluminescence.

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